

**Faculty of Computing and Technology, University of Kelaniya**

**Department of Computer System Engineering**

**Introduction to Database Management Systems [CSCI 11062]**

Assignment – Realizing database design process

Online Vehicle Rent Company Database Management System

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**Declaration**

I hereby certify that this report does not contain any material previously published or written by another person except where due reference is made in the text.



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(Signature of the student)

Date: dd/mm/yyyy

**2. Online Vehicle Rent Company Database Management System**

There are Employees who work for the company. There is a manager who Manages the company. Employees has an unique Employee ID, Name, Address, Contact Number, responsibility , and Salary. Manager manages many employees. One particular employee handle the registration of Vehicles. Vehicle must be registered. There are various vehicles like Cars, Vans, Bikes, Buses etc.. to rent. These vehicles has unique Vehicle ID, unique Plate No, Model of the vehicle, Mileage, Daily rent price and Vehicle type. Employees manages the customer’s Reservations of vehicles. When customer hired a vehicle their Names(First name and Last name), unique National Identification Number, Driving license number, Address and two working numbers will be recorded. When customer make reservations unique Reservation ID, reserved date, pick up date, return date and pick up location will be recorded. When they make reservations they can choose their favorite vehicle if it available at that time. Customers have to pay rent of the vehicle they got. They can taking a vehicle for rent per days. When customer pay rent, they can choose payment method that easy for them. Pay date, Pay amount, Refund details, unique Rent ID and damage compensation will be recorded under rent. Rent involves with particular vehicle.

**3.**

Pays

**CUSTOMER**

Makes

Choose

**RENT**

**VEHICLE**

Involves

Register

**RESERVATION**

Manages

Manages

**EMPLOYEE**

**1 N**

**1 M N**

**N N M**

**M**

**M**

**N 1**

**4.**

**Employee**(EID, Ename, Address, Salary, ContactNo, Responsibility)

**Reservation**(RID, EID, Pick\_Location, PickupDate, ReturnDate, ReserveDate, NIC, VID)

**Choose** (RID, VID, Validity)

**Vehicle**(VID, PlateNo, DailyPrice, Model, VType, EID, NIC)

**Rent**(RentID, Refund, PayMethod, PayDate, PayAmount, Damage\_Compe, VID , NIC)

**Customer**(NIC, DLicenceNo, FName, Lname, Address)

**5. & 6.**

**Create table Employee**

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CREATE TABLE Employee (

EID INTEGER PRIMARY KEY,

EName VARCHAR(80) NOT NULL,

Address VARCHAR(30),

Salary NUMERIC NOT NULL,

ContactNo INTEGER NOT NULL,

Responsibility VARCHAR(20)

);

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**Create table Customer**

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CREATE TABLE Customer (

NIC VARCHAR(15) PRIMARY KEY,

FName VARCHAR(8) NOT NULL,

LName VARCHAR(15) NOT NULL,

DLicense VARCHAR(10) UNIQUE,

Address VARCHAR(30) NOT NULL

);

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**Create table Vehicle**

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CREATE TABLE Vehicle (

VID VARCHAR(8) NOT NULL,

PlateNo VARCHAR(7) NOT NULL,

DailyPrice NUMERIC CHECK (DailyPrice >0),

Model VARCHAR(10),

VType VARCHAR(6) NOT NULL,

EID INTEGER NOT NULL,

NIC VARCHAR(15) NOT NULL

);

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**Create table Reservation**

**---------------------------------------**

CREATE TABLE Reservation (

RID VARCHAR(8) PRIMARY KEY,

PickLocation VARCHAR(25),

PickupDate VARCHAR(15) NOT NULL,

ReturnDate VARCHAR(15) NOT NULL,

ReserveDate VARCHAR(15) NOT NULL,

VehicleID VARCHAR(8) NOT NULL,

EmployeeID INTEGER NOT NULL,

NIC VARCHAR(15) NOT NULL

);

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**Create table Choose**

**-------------------------------**

CREATE TABLE Choose (

RID VARCHAR(8) NOT NULL,

VID VARCHAR(8) NOT NULL,

Validity VARCHAR(8) NOT NULL

);

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**Create table Rent**

**-----------------------------**

CREATE TABLE Rent (

RentID VARCHAR(8) PRIMARY KEY,

Refund FLOAT CHECK (Refund>0),

PayMethod VARCHAR(5),

PayDate VARCHAR(15) NOT NULL,

PayAmount NUMERIC NOT NULL CHECK(PayAmount>0),

DamageCompensition NUMERIC,

NIC VARCHAR(15) NOT NULL,

VID VARCHAR(8) NOT NULL

);

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**Define Primary keys**

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ALTER TABLE Vehicle ADD CONSTRAINT pk\_vehicle PRIMARY KEY (VID) ;

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**Define Foreign keys**

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ALTER TABLEVehicle ADD CONSTRAINT fk\_vehicle1 FOREIGN KEY (EID) REFERENCES Employee (EID);

ALTER TABLE Vehicle ADD CONSTRAINT fk\_rvehicle2 FOREIGN KEY (NIC) REFERENCES Customer (NIC);

ALTER TABLE Reservation ADD CONSTRAINT fk\_reserve1 FOREIGN KEY (VehicleID) REFERENCES Vehicle (VID);

ALTER TABLE Reservation ADD CONSTRAINT fk\_reserve2 FOREIGN KEY (EmployeeID) REFERENCES Employee (EID);

ALTER TABLE Reservation ADD CONSTRAINT fk\_reserve3 FOREIGN KEY (NIC) REFERENCES Customer (NIC) ;

ALTER TABLE Rent ADD CONSTRAINT fk\_rent1 FOREIGN KEY (NIC) REFERENCES Customer (NIC);

ALTER TABLE Rent ADD CONSTRAINT fk\_rent2 FOREIGN KEY (VID) REFERENCES Vehicle (VID);

**7.**

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**Insert records to the Employee table**

**--------------------------------------------------------**

INSERT INTO Employee VALUES (0001, ‘Kamal Jayasundara’, ‘Unagalle,Ethnawala,Warakapola’, 25 000, ‘0111234567’, ‘Registering’);

INSERT INTO Employee VALUES (0002, ‘Ravindu Gunathilaka’, ‘Waragoda,Molagoda,Kegalle’, 18 500, ‘0112765438’, ‘Cleaning’);

INSERT INTO Employee VALUES (0003, ‘Saman Rathnayake’, ‘Dippitigoda,Kelaniya’, 48 000, ‘0770123456’, ‘Managering’);

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**Insert records in to Customer table**

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INSERT INTO Customer VALUES (‘197824532451’, ‘Hansani’, ‘Gunathilaka’, ‘B1234567D’,’Panchikawaththa road,Colombo’ );

INSERT INTO Customer VALUES(‘200012345617’, ‘Sunil’,’Wimalarathne’, ‘A87654392D’, ‘Balagama road,Kelanimulla’);

INSERT INTO Customer VALUES(‘196532146534’, ’Sandun’, ‘Priyankara’, ‘A12357654D’, ‘Minuwangoda Road,Katugoda’);

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**Insert records in to Vehicle table**

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INSERT INTO Vehicle VALUES(‘V0001’, ‘AAM3254’, 2000, ‘TOYOTA’, ‘car’, 0001, ‘197824532451’);

INSERT INTO Vehicle VALUES(‘V0002’, ‘SG3324’, 2500, ‘FORD’, ‘van’, 0002, ‘200012345617’);

INSERT INTO Vehicle VALUES(‘V0003’, ‘BM1234’, 3000, ‘TATA’, ‘bus’, 0003, ‘196532146534’);

**--------------------------------------------------------**

**Insert records in to Reservation table**

**--------------------------------------------------------**

INSERT INTO Reservation VALUES(‘R0001’, ‘Panchikawaththa Junction’, ‘2022.10.05’, ‘2022.10.10’, ‘2022.10.03’, ‘V0001’, 0001, ‘197824532451’);

INSERT INTO Reservation VALUES (‘R0002’, ‘Rent place’, ‘2022.11.18’, ‘2022.11.30’, ‘2022.11.18’, ‘V0002’, 0002, ‘200012345617’);

INSERT INTO Reservation VALUES (‘R0003’, ‘Minuwangoda bus stand’, ‘2021.01.16’, ‘2021.01.18’, ‘2021.01.02’, ‘V0003’, 0003, ‘196532146534’);

**-----------------------------------------------**

**Insert records in to Choose table**

**------------------------------------------------**

INSERT INTO Choose VALUES(‘R0001’, ‘V0001’, ‘Valid’);

INSERT INTO Choose VALUES(‘R0002’, ‘V0002’, ‘Valid’);

INSERT INTO Choose VALUES(‘R0003’, ‘V0003’, ‘Valid’);

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**Insert records in to Rent table**

**--------------------------------------------------**

INSERT INTO Rent VALUES(‘RE0001’, 500.00, ‘Cash’, ‘2022.10.10’, 20 000, 500.00, ‘200012345617’, ‘V0001’);

INSERT INTO Rent VALUES(‘RE0002’, 1000.00, ‘Card’, ‘2022.11.30’, 36 000, 5000, ‘197824532451’, ‘V0002’);

INSERT INTO Rent VALUES(‘RE0003’, 3000.00, ‘Card’, ‘2021.01.16’, 6000, 1000.00, ‘196532146534’, ‘V0003’);

**8.**

SELECT \* FROM Employee;

SELECT EID, EName, Salary

FROM Employee

WHERE Salary >20 000;

SELECT FName, PayAmount

FROM Customer c, Rent r

WHERE c.NIC=r.NIC

ORDER BY FName ASC;

SELECT MIN(PayAmount) AS MinPayment

FROM Rent;

SELECT \* FROM Vehicle,Choose;